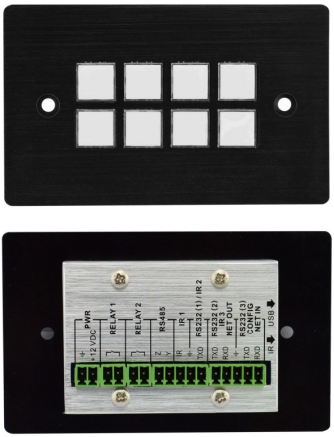
USER MANUAL

RTBP8

REVTEK Programmable Button Control Panel



Revolution Technologies www.revtek.com.au

Model: RTBP8 2013V1.1

NOTICE: Please read this user manual carefully before using this product.

This manual is for operational instruction only and is not designed for any maintenance taks. The functions described in this version were updated in May 2013. Any changes of functions and parameters since then will be published separately. Please refer to your local dealer for the latest details.

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All product functions are valid as of 28th May 2013.

Update History

Version	Date	Update Content
1.0	2012.02.25	Initial Release.
1.1	2013.05.28	Connections have been modified.

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1. Introduction

1.1 Introduction to RTBP8

RTBP8 is a Programmable Wall Control Panel. Every button is programmable and works either individually or together. The RTBP8 h3 RS232, 1 RS485, 3 Infrared & 2 Relay, and 1 mini USB for programming.

Please notice, RS232 (1) and IR2 share the same port, cannot be used at the same time. Also, RS232 (2) and IR3 share the same port, cannot be used at the same time.

It can control devices such as projectors, screens etc. It is an easy-to-use control device for presentation show rooms, classrooms and boardrooms.

1.2 Package Contents

- 1 x RTBP8
- 1 x Power adapter (DC 12V)
- 4 x Captive screw connector
- 3 x IR emitting probe
- 1 x Button Labels
- 1 x User Manual

Notes：Please confirm if the product and the accessories are all included, if not, please contact the dealer from which you purchased the RTBP8 from.

2. Features

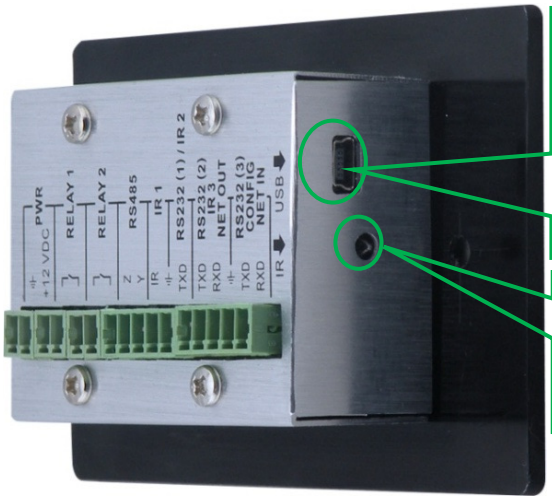
- Every button can be programmed to send bi-directional RS232 and RS485 commands simultaneously to control third party devices.
- Every button can be programmed to send the infrared code, control the relay, to let them work simultaneously to control the third party devices.
- Every button is built in the infrared code and RS232 code learning function, and baud-rate setting.
- ID looping function. 99pcs RTBP8 can be looped and controlled together, by ID identifying.
- The RTBP8 can be programmed by USB or RS232, using the software available from www.revolutiontechnologies.com.au
- Crystal and backlit buttons with easy user-friendly customisable changeable labels.
- The backlit brightness is controllable.
- Dimension: 11.4cm long and 7cm wide.

3. Specifications

Specifications			
Program Port	USB or RS232	Output Port	3 x RS232, 1 x RS485, 3 x Infrared, 2 x Relay
Serial Control Port	RS232	Baud Rate And Protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Software	PS	Temperature	-20 ~ +70℃
Frequency Response	20Hz ~20KHz	Humidity	10% ~ 90%
Power Supply	100VAC~240VAC, 50/60 Hz	Power Consumption	1W
Case Dimensions	Dual-gang electron box, 114x70 x28mm	Product Weight	0.15kg

4. Connection Introduction

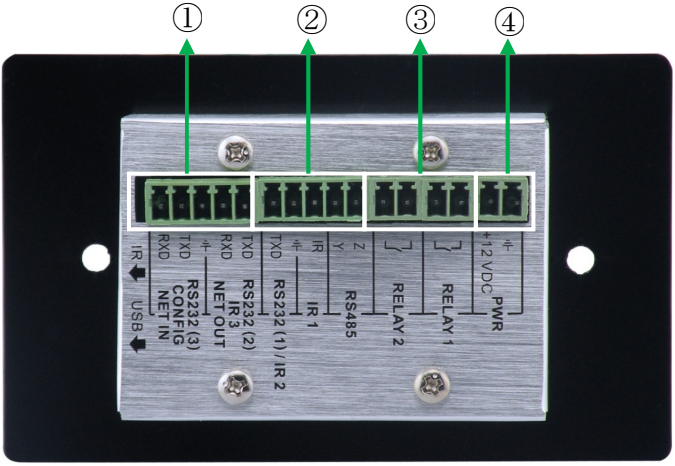
4.1 Introduction of the Interfaces



Mini USB Connector:

1. Communicate with PC using the software program the buttons.
2. Transmit the infrared data when learning IR (Optional).

Infrared sensor port: receive and learn the IR code, to build the IR database.

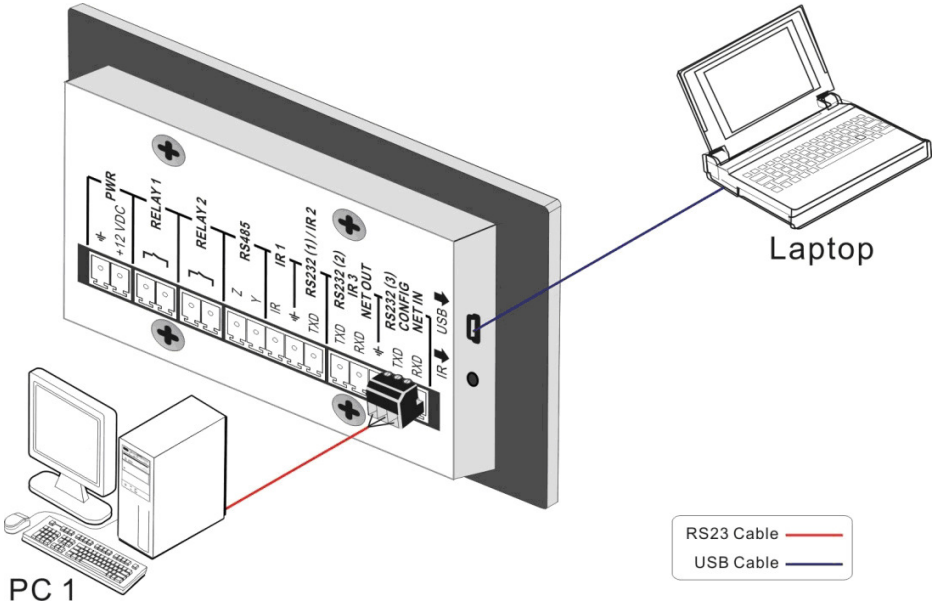


The RTBP8 has various ports in the rear panel, including looping port, RS232 port, RS485 port, IR port, Relay port and Power port.

- This port includes two parts:
  One part is RS232 (2)/IR3, it can be used for control other devices or looping output. RS232 (2) and IR3 share the same port, the detailed use depends on the setting of the programming software.
  Other part is RS232 (3), it can be used for control other devices or looping output, or connect with PC.
  These two parts share the same grounding.
- This port includes: RS232 (1)/IR2, IR1 and RS485.
  a) RS232 (1)/IR2: share the same port, the detailed use depends on the setting of the programming software. When be used as RS232, it is unidirectional transmission, transmit data but without receive.
  b) IR1: for control other devices, it can be programmable by the software.
  c) RS485: the RS485 can be programmed as different commands and control the device with RS485 port. The command of RS485 is the same as RS232 (1).
- Low-Voltage relay ports: set the relay on/off by software.
- Power connector: 12VDC. **Be sure that the "+" and "-" are never connected incorrectly**

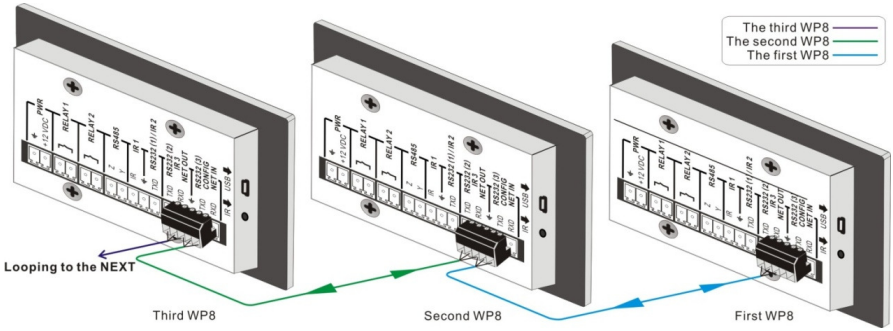
4.2 Connection Programming and Looping

The RTBP8 can be connected to a computer for programming the functions of every button. It can be connected by USB or RS232, with the programming software.



Programming Connection

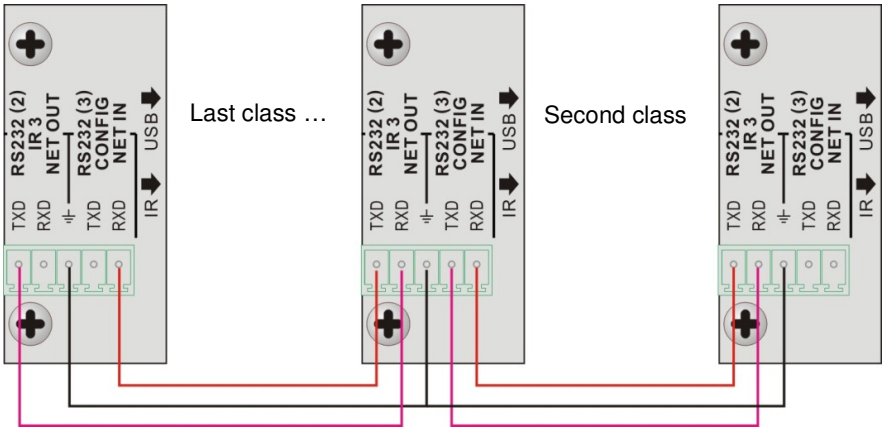
Multiple RTBP8 can also looped within a system allowing for control of more devices. It is looped by the inter-connecting the RS232 ports. Please refer to the demo picture as below:



Several RTBP8 Looping connections

After connect the RTBP8 as above, set the ID of each RTBP8 via the software. The ID

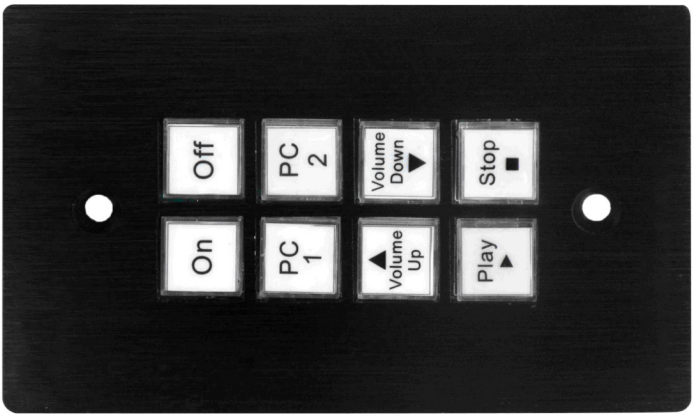
numbers available are from 01 to 99, and it also is the class of RTBP8 in the loop, different RTBP8's should be set to different ID's. After connections have been set, set the control modes via the software. For detailed connection information, please refer to the picture below:



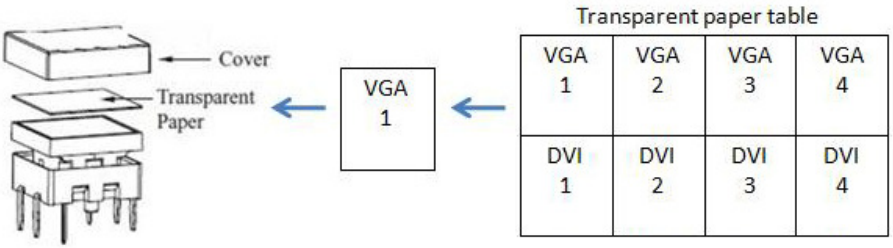
Detailed looping connecting

5. System Operations

5.1 Introduction of the Front Panel



Crystal and luminescent, programmable buttons:
Every button can be programmable with the software available at www.revtek.com.au
Connect the PC via USB or RS232.
Naming labels inside the button can be customised



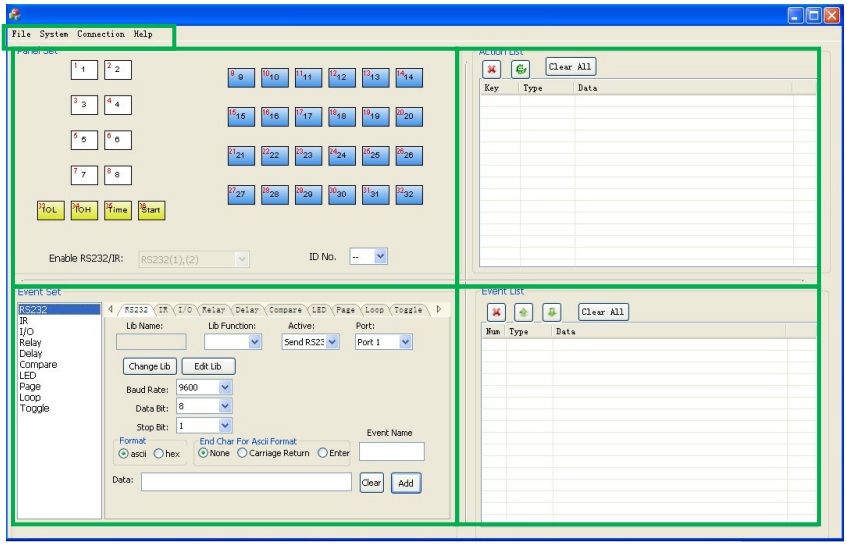
5.2 USB Driver Installation

There are USB driver files and programming software available from www.revtek.com.au

When connecting the RTBP8 to a PC via USB, installation of the USB driver may be required. Use the driver file to install the driver for USB to allow programming of the RTBP8 via USB.

The main window of software has five parts: main menu, panel (button) setting, event setting, action list and event list. In this manual we will take RTBP8 for example, to show the uses of all of its functions.

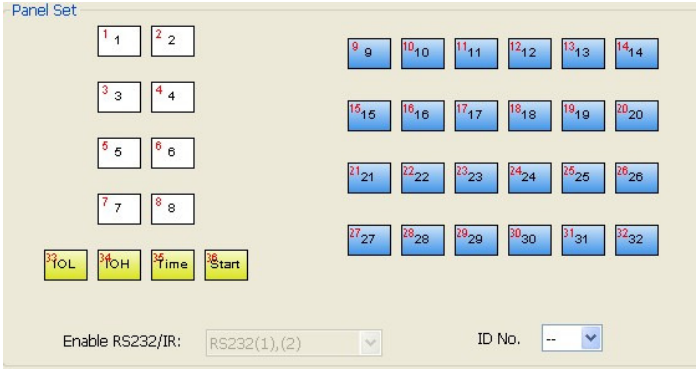
The main window of the software:

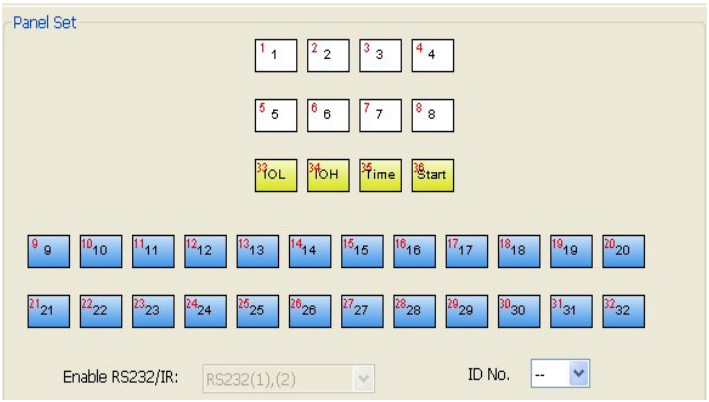


5.2.1 Main Menu

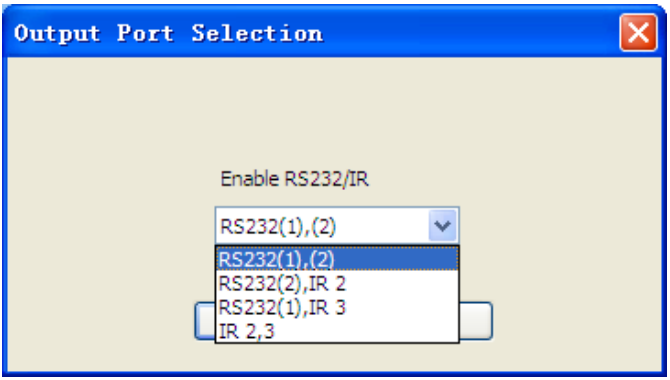
The main menu includes file management, system model, connection type and help.

1) File management: Open/Save/Save as a configuration. After program, user can save the configuration to a file, so that you can use the same configuration next time.
2) System model: includes RTBP8 -H, RTBP8 –V etc, and the buttons interface view are different with different models. The pictures below show the differences between RTBP8 -V and RTBP8 -H.





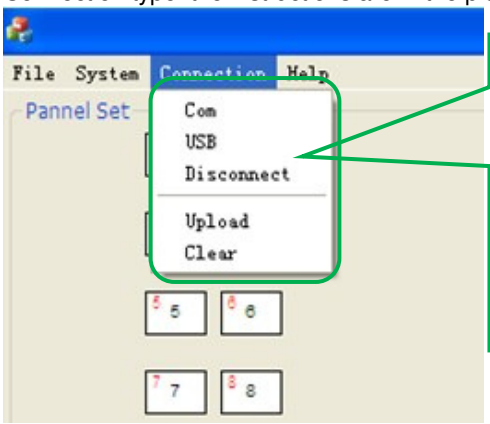
NOTICE: When selecting the model RTBP8, a dialogue box will appear: “Output Port Selection” allowing for selection of different RS and IR types, depending on the uses of the two shared ports. The dialog is appears as below:



The output port set in the software and the port used in RTBP8 should correspond. There are four output types. They are showed as below form ("√" means port is available):

Output port of RTBP8 / Output mode of the programming software	IR1	RS232(1)	IR2	RS232(2)	IR3	RS232(3)	RS485
RS232(1)(2)	√	√		√		√	√
RS232(2),IR2	√		√	√		√	
RS232(1),IR3	√	√			√	√	√
IR2,3	√		√		√	√	

3) Connection type: the instructions are in the picture below:



1：Com, connect by serial port.
2：USB, connect by mini USB.
3：Disconnect, disconnect the connection.
4：Upload: upload the programmed data to RTBP8 . It will clear all the old data in RTBP8 .
5：Clear, clear the data in

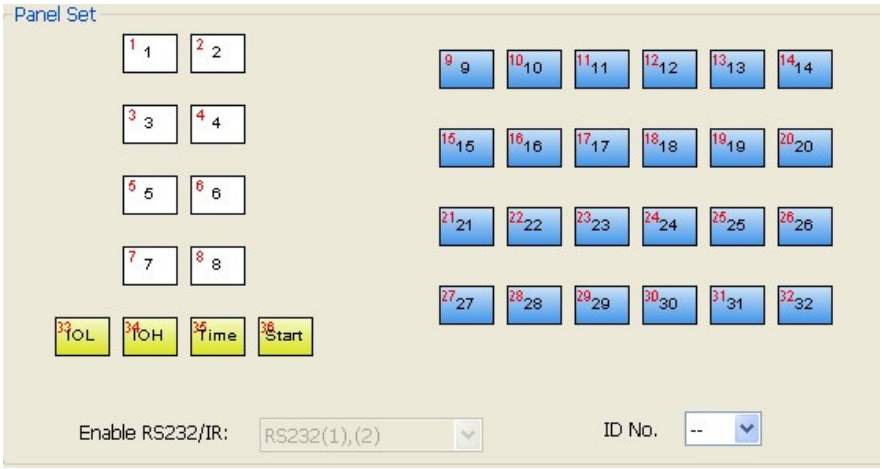
The functions of RTBP8 's buttons will be available only after the programmed data

is uploaded successfully.

4) Help: Show the information of the programming software.

5.2.2 Panel/Key setting

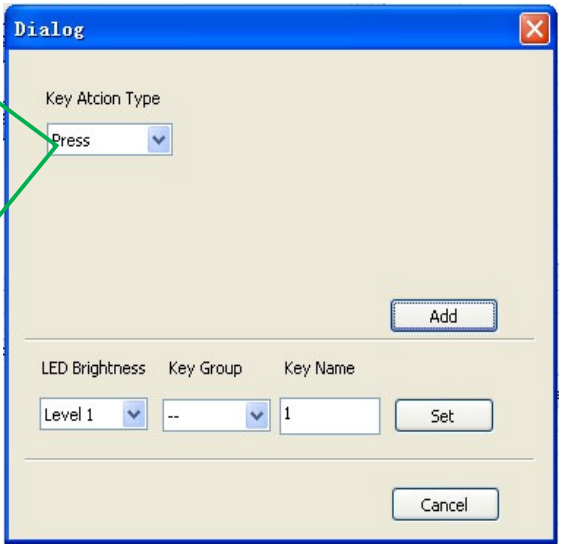
There are three different colors of keys in the panel set of the programming software. Add a key action to action list, then add events to this action, make this action will execute the events. Here take RTBP8 -V for example, to introduce the uses of different buttons:



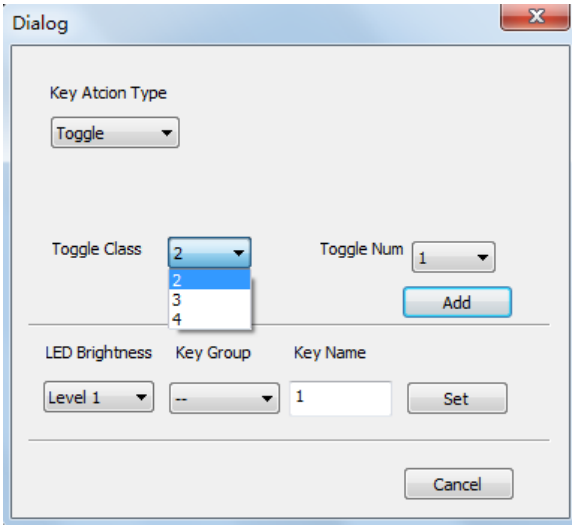
1. White keys: keys 1-8, correspond to the buttons on RTBP8. Click the key, it will pop up dialog as below:

Key Action Type：

1. Press: Execute events when press button.
2. Release: Execute events when release button.
3. Page: Built-in most 4 actions, actions need to be switched by other buttons, press to execute.
4. Toggle: Built-in most 4 actions, actions will loop run when press. Actions can also be switched by other buttons, press to execute.



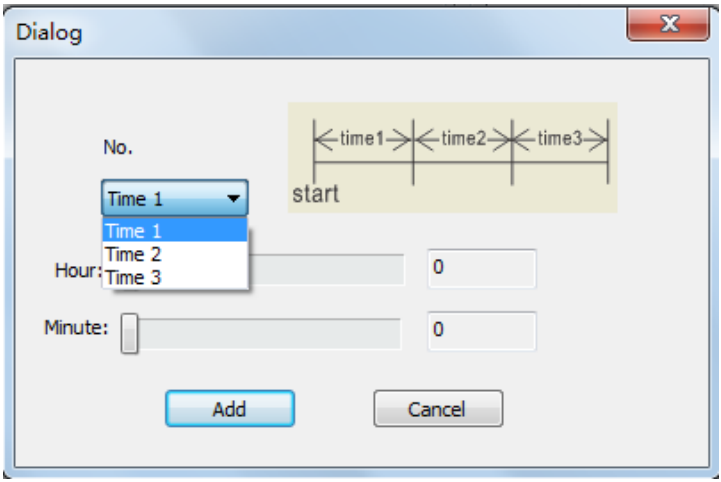
When select the type “Toggle”, the setting interface is as below:



The toggle class is the action loop class, depends on the numbers of looped actions. When the class is 2, there are two actions in the toggle. And so on.

2. Blue Keys: Keys 9-32, all are virtual keys, used in the loop function. When use the loop function, the ID must be set, the ID can be 1 to 99. Press “add” will add the button to action list.

3. Yellow Keys: Keys 33-36, all are virtual keys. Key 33 and 34 are for I/O control, which is not supported with RTBP8 . Key 36 is a start action, if add events to this action, when the RTBP8 is power on, it will execute the events in this action. Key 35 is delay button, there are three time slots can be set. See in the picture below:

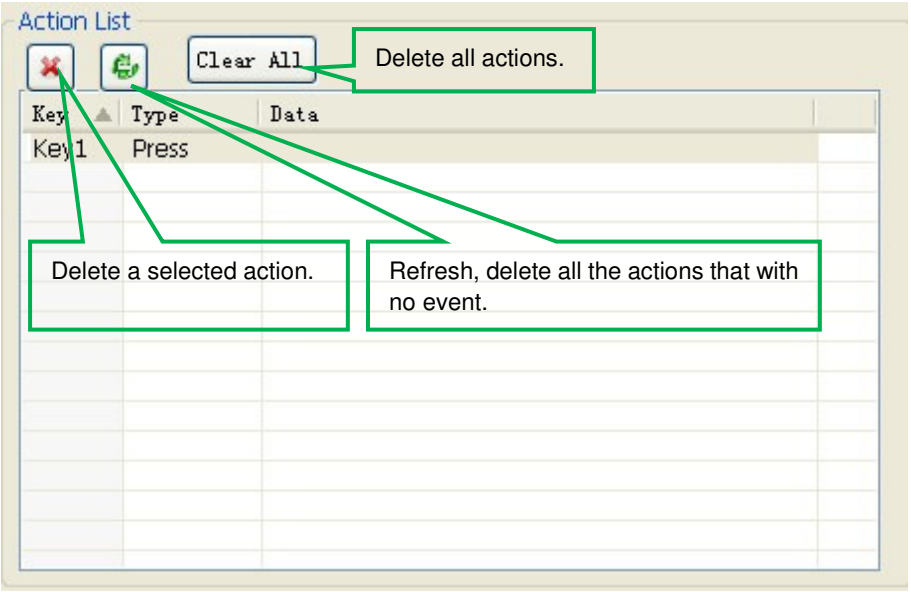


The time is counted from RTBP start. When come to time1, RTBP will execute the events in time1. Then recount from time2, and then time3.

Example: Set time1 to 5 minutes, and time2 to 3 minutes, add event1 to time1 and event2 to time2. When the unit starts, it will execute event1 after 5 minutes, and then execute event2 after 8 minutes.

5.2.3 Action list

Action list shows all the set actions. An available action must be added to the list. The action list is as the picture below:

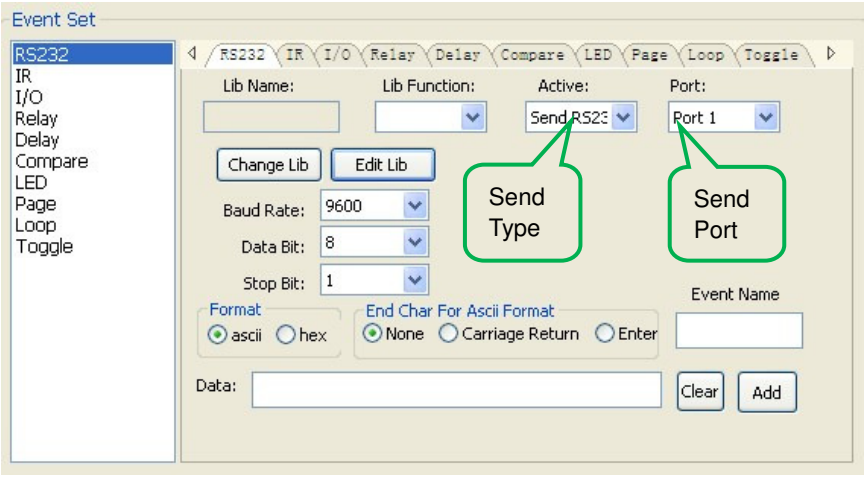


5.2.4 Event setting

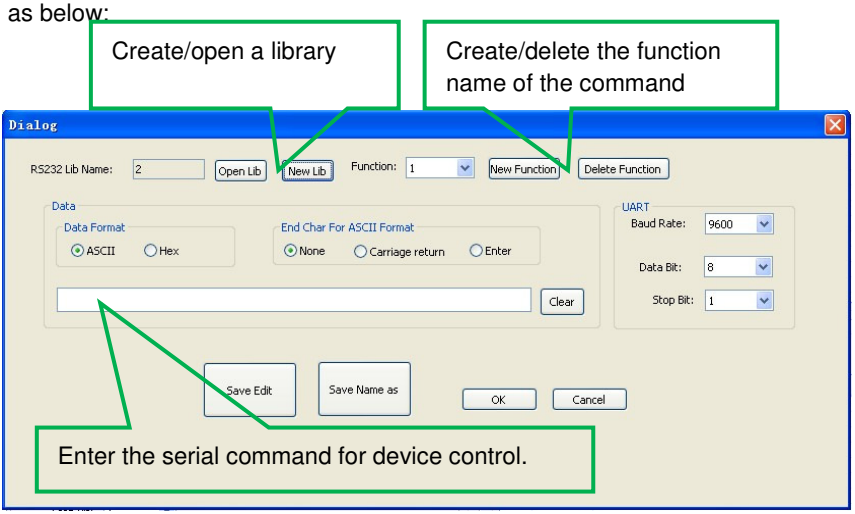
Event setting includes RS232, IR, I/O, Relay, Delay, Compare, LED, Page, Loop and Toggle setting. Before set events, an action must be added first. The following introduction will show you the setting of each event:

- **RS232 Setting**

This item is used for setting the parameters of the RTBP8 's serial ports. Click "RS232", it will show as below:

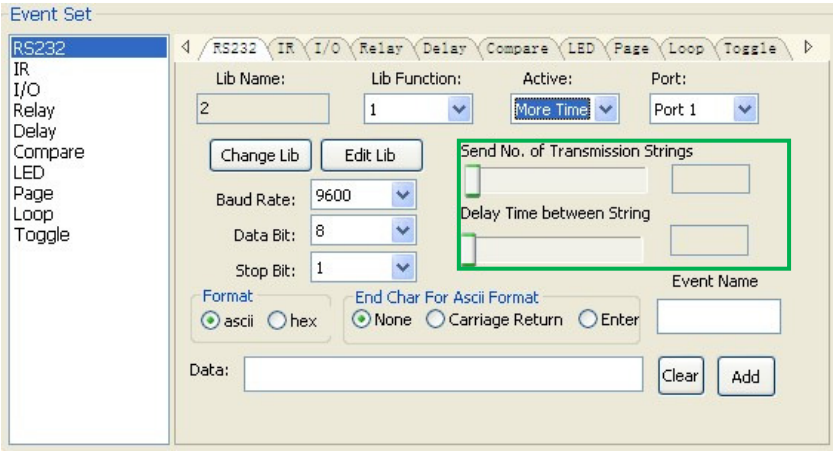


1) The data of RS232 can be directly entered or selected from library. Click “Change Lib” to select a library file and open it. Click “Edit Lib” to create or edit a library file as below:



Notice: When editing finish, remember to save the editing, and then press “OK”.

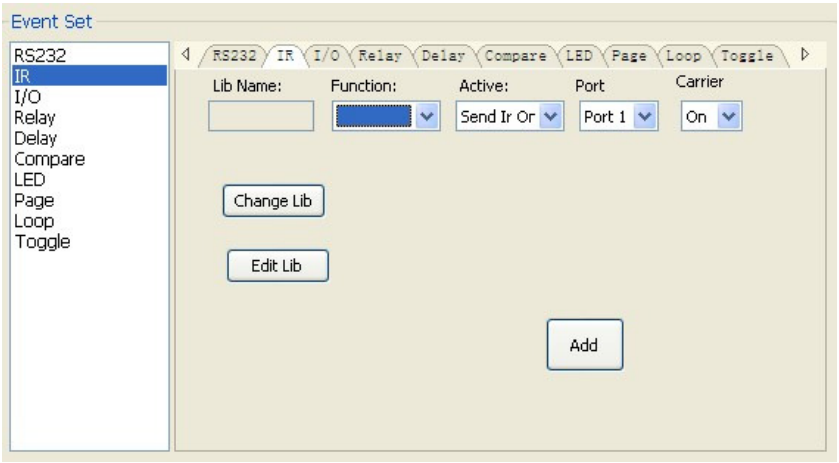
2) There are two send types: send once and send more times. When select “more times”, the send times and the delay between times can be set. See in picture below:



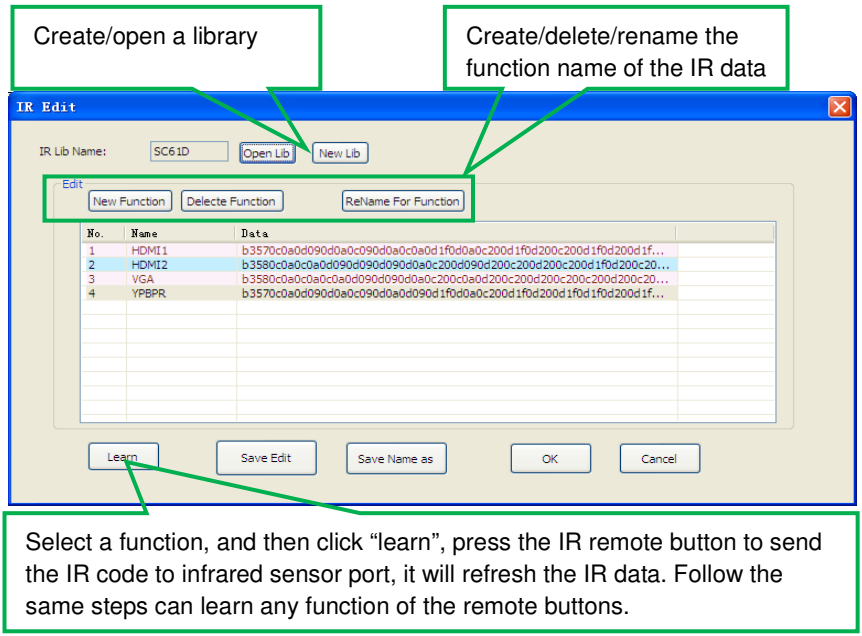
3) The send port must be selected as the same as model setting, otherwise the event cannot be added.
4) User can set the event name. It is optional function, not necessary.

- **IR Setting**

  This item is used for setting the parameters of the RTBP8 's IR ports. Click "IR", it will show as below:

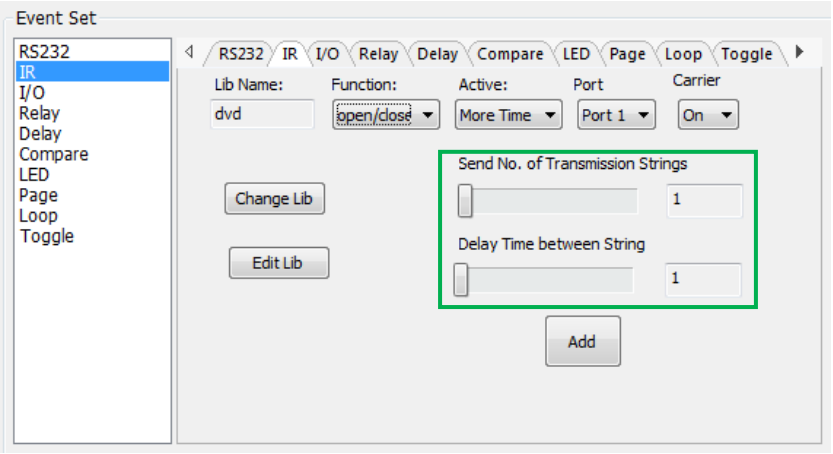


1) The data of IR need to be selected from library. Click "Change Lib" to select a library file and open it. Click "Edit Lib" to create or edit a library file as below:



Notice: When editing finish, remember to save the editing, and then press “OK”.

2) There are two send types: send once and send more times. When select “more times”, the send times and the delay between times can be set. See in picture below:



3) The send port must be selected as the same as model setting, otherwise the event cannot be added.

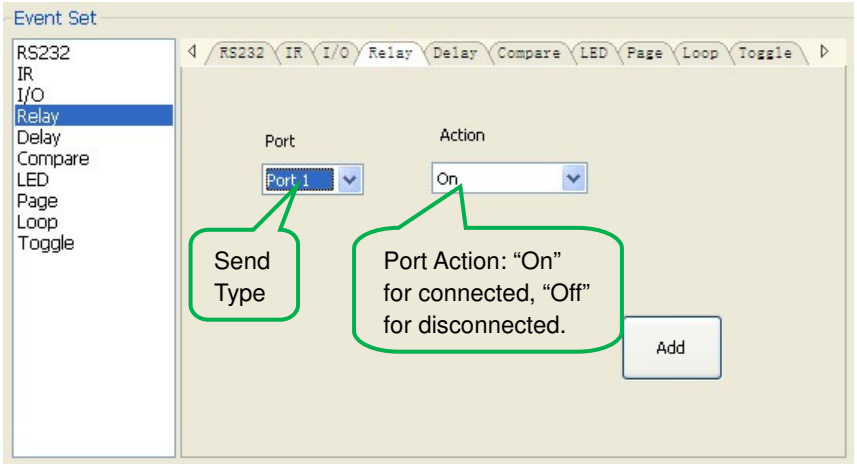
4) The IR can set the carrier on/off, to turn on/turn off the IR sending.

- **I/O Setting**

  There is no I/O port in RTBP8 , so the setting is not introduced in this manual.

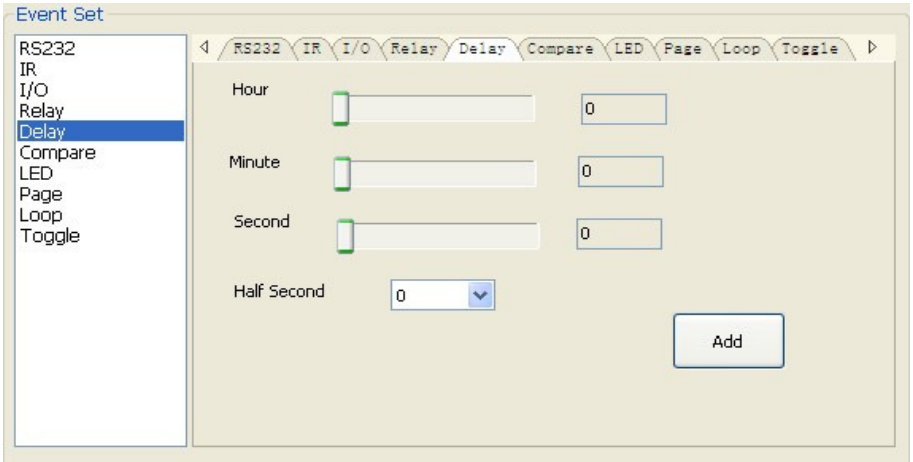
- **Relay Setting**

  This item is for the replay ports setting. The setting is as the picture below:



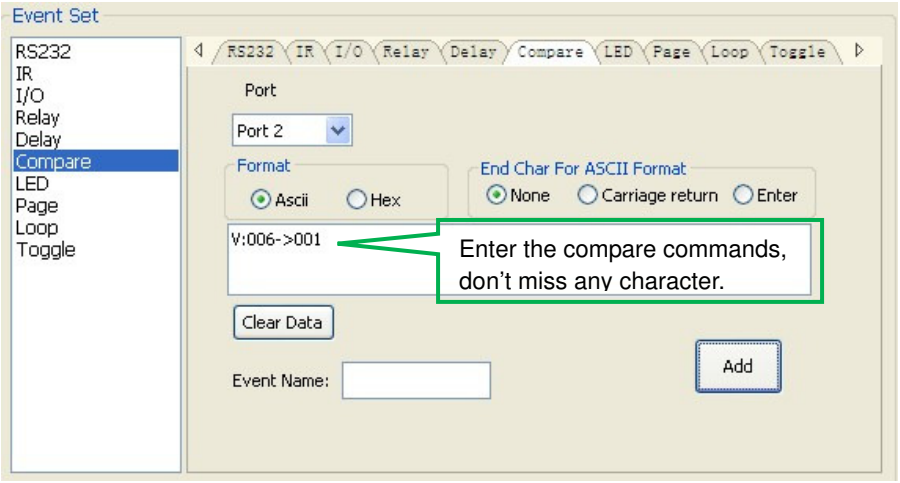
- **Delay setting**

This item is to set a delay time, user can add a delay between two events; so when one event is finished, it will delay a certain time then start another event. The delay setting is as picture below:



➢ **Compare Setting**

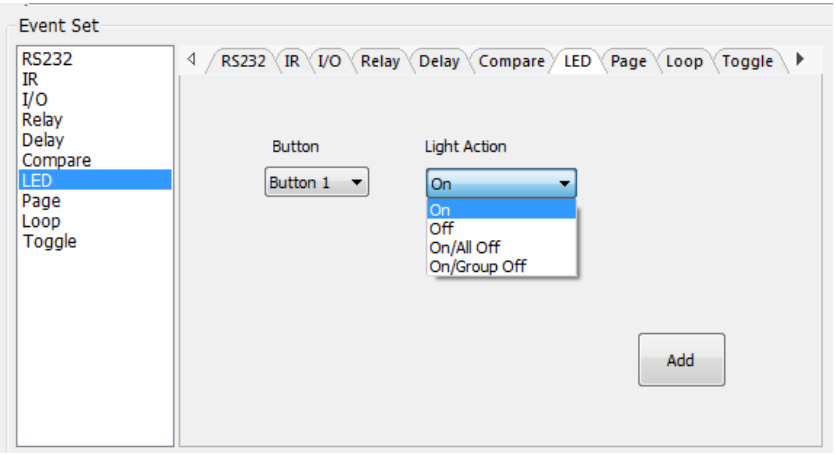
This item is used for compare the feedback of RS232 commands. When RTBP8 send a RS232 command to the controlled device, the device will send back a feedback. If we add the correct feedback in the data, RTBP8 will compare it with the feedback received from controlled device, to verify the command is work or not. The compare setting is as the picture below:



1) The send port must be selected as the same as model setting, otherwise the event cannot be added. And port 1 cannot be used for compare, for there is no a receive pin in this port.
2) User can set the event name; it is optional function, not necessary.
3) For the events in one event list have priority, from top to bottom, so that the compare function can be used in action which with three or more events. When send a serial command, we can add a compare then other events. If the compare is incorrect, the event behind compare will not be executed.

➢ **LED setting**

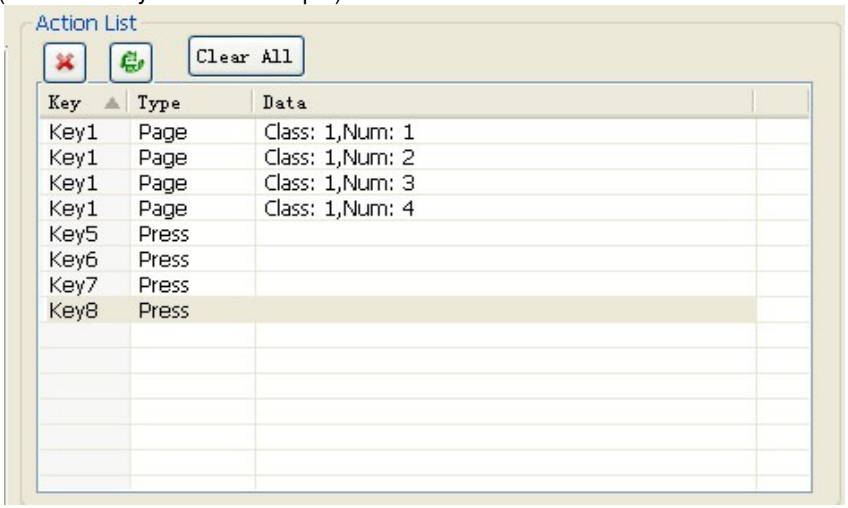
This item is used for set the button LEDs in RTBP8 to turn on/off. The setting is as below:



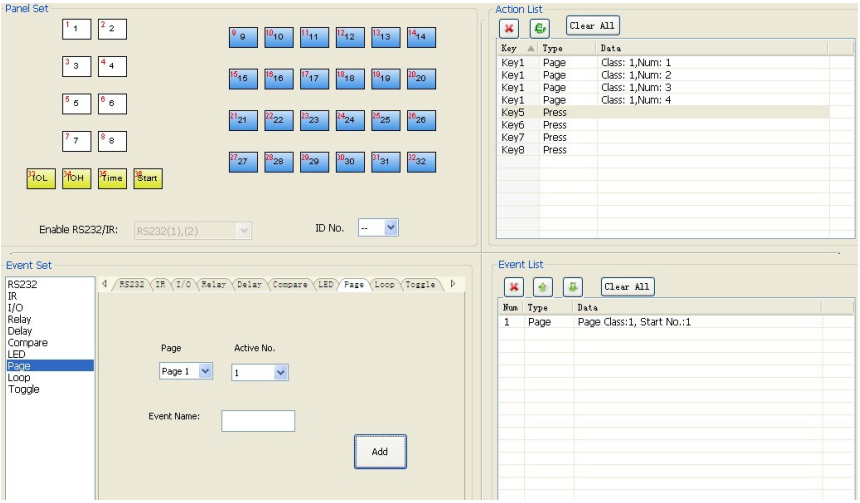
➢ **Page setting**

White buttons can be set to type “page” that include four actions. To change different actions, it will need other white buttons to active the page action number. Here take a example to show you the use of this function:

1) Take button1 for example: click key1 and select the action type “page”, add the four actions to the action list. Then add other four buttons “press” action to the list (here take keys 5-8 for example):



2) In event setting, we add four different events to the four page actions of key1, and the four other keys will be added the page event to each of them as below:



Then set the “page” event to make four “press” actions to active the four page number: key5-num1, key6-num2, key7-num3 and key8-num4. It will perform like this:

a) When press the button5 and then button1, the button1 will execute the event of num1, press button1 more times it will execute num1 more times;

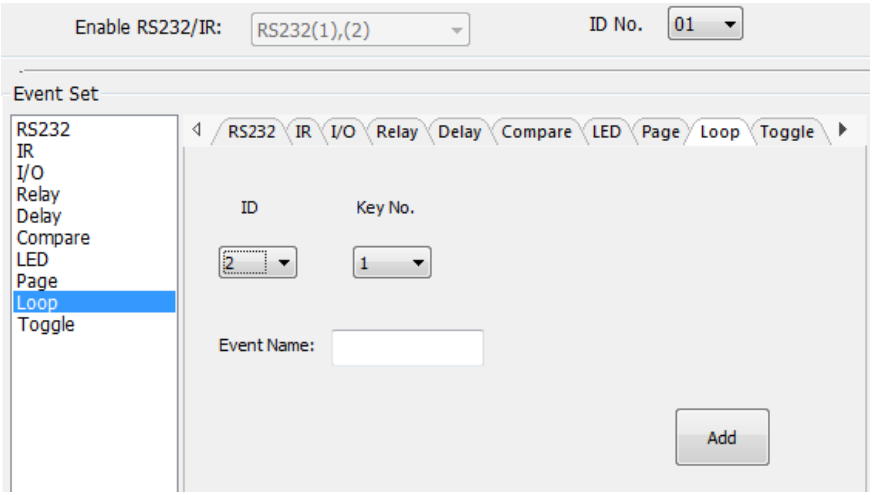
b) When press the button6 and then button1, the button1 will execute the event of num2, press button1 more times it will execute num2 more times;

c) When press the button7 and then button1, the button1 will execute the event of num3, press button1 more times it will execute num3 more times;

d) When press the button8 and then button1, the button1 will execute the event of num4, press button1 more times it will execute num4 more times.

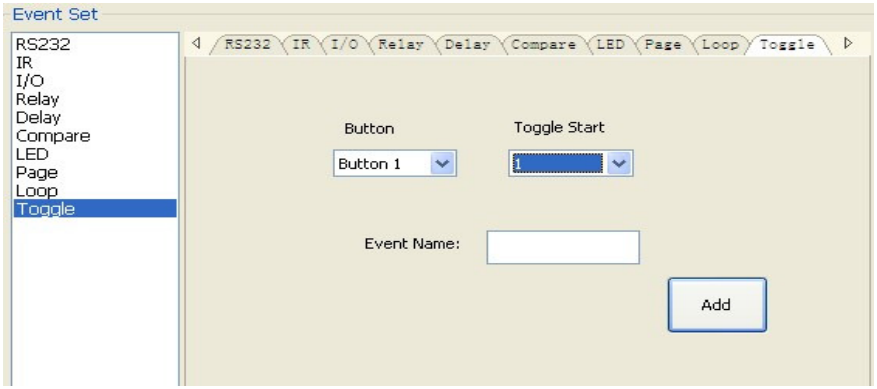
- **Loop Setting**

This item is used for looping RTBP8 . When use the loop function, the ID of each RTBP8 must be set.



➢ **Toggle Setting**

The toggle setting is as the picture below:



The setting steps of toggle are similar with the page setting. But toggle performs differently, for the actions in it are loop running, it will perform as below (take the same example like page function):

a) When press the button5 and then button1, the button1 will execute the event of num1, press button1 more times it will execute num2, then num3->num4->num1 and so on.

b) When press the button6 and then button1, the button1 will execute the event of num2, press button1 more times it will execute num3, then

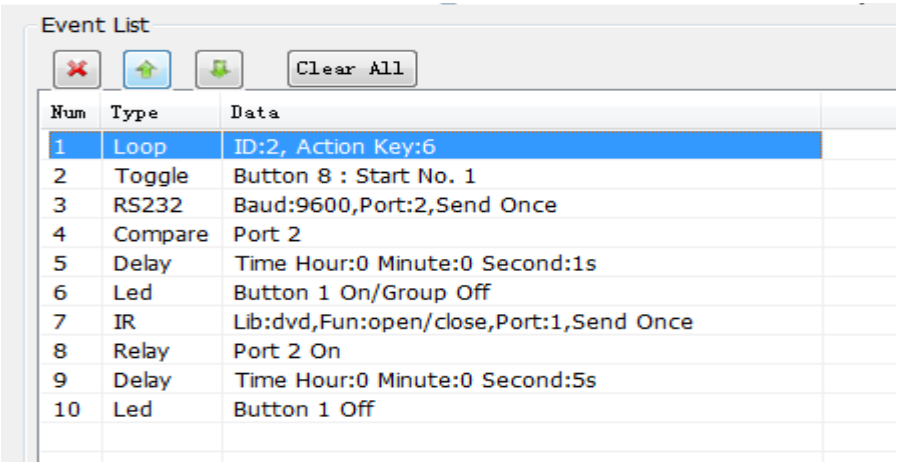
num4->num1->num2 and so on.

c) When press the button7 and then button1, the button1 will execute the event of num3, press button1 more times it will execute num4, then num1->num2->num3 and so on.

d) When press the button8 and then button1, the button1 will execute the event of num4, press button1 more times it will execute num1, then num2->num3->num4 and so on.

5.2.5 Event List

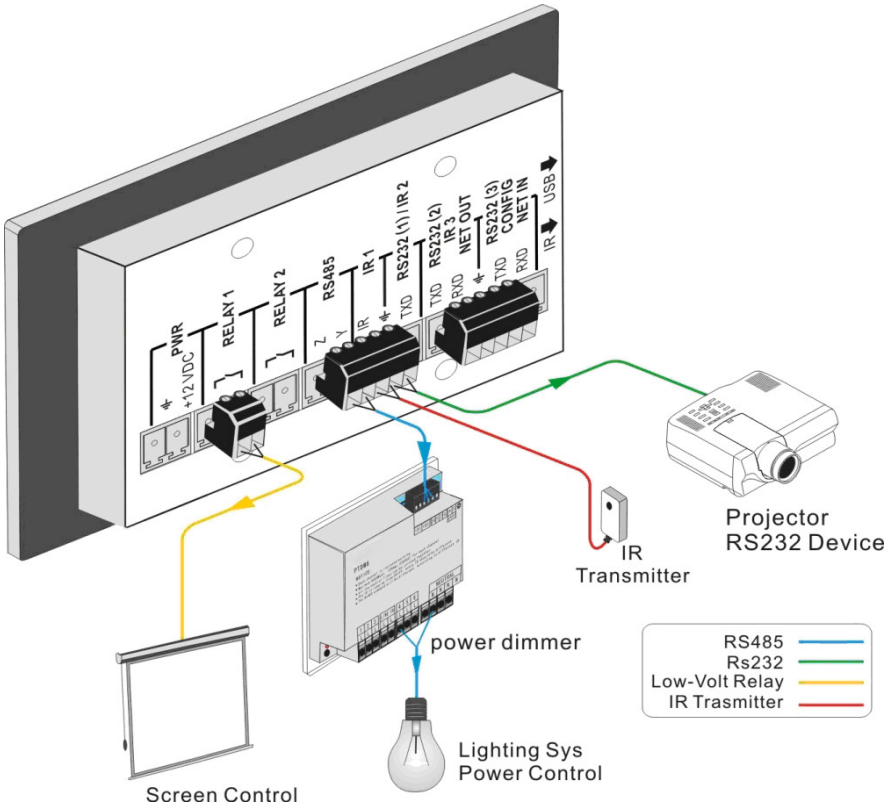
The event list shows all events of the selected action, and for each action of RTBP8 , the most events can be added is ten. The executing priority is from 1 to 10, see the picture below. If there is an event execute incorrectly, all the events behind it will not be executed.


Event List
Clear All
Num
Type
Data
1 Loop ID:2, Action Key:6
2 Toggle Button 8 : Start No. 1
3 RS232 Baud:9600,Port:2,Send Once
4 Compare Port 2
5 Delay Time Hour:0 Minute:0 Second:1s
6 Led Button 1 On/Group Off
7 IR Lib:dvd,Fun:open/close,Port:1,Send Once
8 Relay Port 2 On
9 Delay Time Hour:0 Minute:0 Second:5s
10 Led Button 1 Off

6. System Diagram

The RTBP8 can active different ports at one time. It means every button can send the RS232 and RS485 commands, IR code and control the relay at the same time.

The demo system diagram as below:



System Diagram

7. Troubleshooting & Maintenance

1) When RTBP8 cannot work, please check and make sure the power cord connection is well, power connector cannot be mixed or connect wrong. Then restart, if still not work, the RTBP8 may be broken. Please send it to the dealer for repairing.

2) When USB cannot open or without response, please make sure the USB driver is installed correctly, and then reconnect the USB cable.

3) When uploading the USB cannot be found, please restart the software or RTBP8 .

4) When the LED of a button cannot be lighted, please check if there is a compare event in this button. If yes, delete the compare and try again. If still not work, the LED may be broken. Please send the unit to dealer for repairing.

5) When serial commands sending without function executed, please check the baud rate and make sure is correct, and the serial connection is well.

6) If the controlling queue is confused when use loop function, please reboot the RTBP8 .

8. Safety Operation Guide

In order to guarantee the reliable operation of the equipments and safety of the staff, please abide by the following proceeding in installation, using and maintenance:

1) The system must be earthed properly. Please do not use two blades plugs and ensure the alternating power supply ranged from 100v to 240v and from 50Hz to 60Hz.

2) Do not put the switcher in a place of too hot or too cold.

3) As the power generating heat when running, the working environment should be maintained fine ventilation, in case of damage caused by overheat.

4) Please cut off the general power switch in humid weather or left unused for long time.

5) Before following operation, ensure that the alternating current wire is pull out of the power supply:

- Take off or reship any components of the equipment.
- Take off or rejoin any pin or other link of the equipment.

6) As to non-professional or without permission, please DO NOT try to open the casing of the equipment, DO NOT repair it on your own, in case of accident or increasing the damage of the equipment.

7) DO NOT splash any chemistry substance or liquid in the equipment or around.

9. After-sales Service

1) If there appear some problems when running RTBP8 , please check and deal with the problems reference to this user manual. Any transport costs are borne by the users during the warranty.

2) You can email to our after-sales department or make a call, please tell us the following information about your cases.

- Product version and name.
- Detailed failure situations.
- The formation of the cases.

3) We offer products for all three-year warranty, which starts from the first day you buy this product (The purchase invoice shall prevail).

4) Any problem is same with one of the following cases listed, we will not offer warranty service but offer for charge.

- Beyond the warranty.
- Damage due to incorrectly usage, keeping or repairing.
- Damage due to device assembly operations by the maintenance company non-assigned.
- No certificate or invoice as the proof of warranty.
- The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
- Damage caused by force majeure.

Remarks: For any questions or problems, please try to get help from your local distributor, or email at: sales@revtek.com.au